

Supplementary data 2.xlsx

SYMBOL	p-value	Fold-Change	p-value	Fold-Change	Annotation	
	O9-1 up vs DRG		O9-1 up vs Ectoderm			
Crabp1	6.00E-07	28.8	4.37E-05	5.03	neural crest	
Dlx1	1.88E-05	17.6	9.27E-06	25.6	neural crest	
Dlx2	3.16E-06	7.39	3.58E-06	7.09	neural crest	
Epha2	2.74E-07	4.89	6.00E-07	4.02	neural crest	
Ets1	1.66E-03	2.73	2.35E-04	4.26	neural crest	
Itgb1	6.65E-05	2.63	1.82E-06	6.03	neural crest	
Myc	2.27E-08	2.34	1.50E-08	2.49	neural crest	
Sox9	7.18E-07	6.48	4.72E-05	2.49	neural crest	
Tcfap2a (AP-2a)	1.04E-04	3.66	9.60E-05	3.72	neural crest	
Twist1	6.22E-06	4.81	1.93E-06	6.80	neural crest	
Akap1	3.66E-06	2.17	9.54E-07	2.65	neural crest	
Arid5b	9.71E-06	2.66	1.32E-06	3.95	neural crest	
Elk3	2.47E-06	6.99	1.08E-07	26.9	neural crest	
Etv1	5.34E-04	2.00	2.25E-05	3.38	neural crest	
Etv4	6.28E-05	7.80	6.53E-04	3.84	neural crest	
Etv5	1.45E-04	2.70	1.93E-04	2.56	neural crest	
Evi1	5.08E-07	2.56	2.42E-06	2.06	neural crest	
Gstcd	7.90E-06	4.30	1.17E-04	2.49	neural crest	
Itga6	3.53E-05	2.71	7.01E-05	2.42	neural crest	
Mef2a	6.66E-08	3.06	9.13E-08	2.89	neural crest	
Nr2f2	1.39E-04	3.02	4.46E-06	7.44	neural crest	
Ppl	2.05E-09	12.2	9.21E-09	7.02	neural crest	
Pxn	1.39E-04	2.19	1.93E-05	3.03	neural crest	
Tcf20	6.94E-08	3.85	2.31E-07	3.01	neural crest	
Tpm3	5.58E-06	2.42	4.18E-06	2.53	neural crest	
Ccnd1	2.14E-05	16.3	2.81E-04	5.87	neural crest development	delamination
Aebp2	2.63E-06	4.83	5.68E-06	3.98	neural crest development	epigenetic regulator
Prrx1 (Prx1)	9.19E-08	18.2	3.08E-08	32.6	neural crest development	facial mesenchyme, middle ear
Barx1	1.27E-08	6.23	1.71E-08	5.70	neural crest development	pharyngeal arch mesenchyme
Cald1	2.01E-05	2.09	1.32E-05	2.21	neural crest development	migration
Cfl1	2.06E-04	2.74	2.29E-04	2.69	neural crest development	migration
Src	2.47E-07	3.52	7.77E-08	4.62	neural crest development	migration
Col1a1	7.36E-08	6.25	5.10E-09	17.5	neural crest development	osteogenic differentiation
Runx2	2.97E-07	2.54	5.30E-07	2.33	neural crest development	osteogenic differentiation
Spp1	1.60E-06	53.7	6.25E-07	106	neural crest development	osteogenic differentiation
Gli3	2.84E-06	2.71	1.04E-05	2.22	neural crest development	palatogenesis
Rarg	2.01E-07	5.31	2.88E-07	4.81	neural crest development	pharyngeal arches, periocular mesenchyme, cranial ganglia, thymus
Rac1	2.88E-06	4.28	1.41E-05	3.03	neural crest development	migration, post-migratory cell proliferation
Rock1	3.18E-06	2.93	3.95E-06	2.82	neural crest development	promotes EMT
Rock2	9.15E-08	4.82	2.66E-07	3.72	neural crest development	promotes EMT
Bmi1	1.10E-06	4.59	4.77E-07	5.79	neural crest development	enteric nerve neural crest stem cell, neuroblastoma, Ewing sarcoma
Arpc1b	1.97E-09	12.2	8.41E-10	17.8	enteric nerve neural crest stem cell	
Cd9	7.65E-06	6.64	1.31E-06	12.9	enteric nerve neural crest stem cell	
Cyba	3.99E-05	5.44	7.93E-05	4.49	enteric nerve neural crest stem cell	
Bmi1	1.10E-06	4.59	4.77E-07	5.79	enteric nerve neural crest stem cell	
Cd44	3.28E-08	19.2	6.17E-08	14.2	stem cell	
Klf4	3.09E-08	6.19	1.72E-08	7.47	stem cell	
Ly6a (Sca-1)	5.35E-08	7.99	7.31E-08	7.18	stem cell	
Cd47	1.10E-03	2.08	2.13E-05	4.45	stem cell	
Pmp22	7.24E-04	2.80	5.16E-05	5.27	multipotent trunk neural crest, glial differentiation	

Bdnf	2.03E-08	16.1	2.25E-08	15.4	Hirschsprung disease
Fosl1	1.64E-08	11.6	1.56E-08	11.9	Ewing sarcoma
Hmga1	8.86E-07	23.1	1.55E-04	3.63	neuroblastoma
Hmga2	6.67E-09	5.49	8.43E-08	3.05	neuroblastoma
Kitl	2.11E-07	4.19	1.65E-07	4.45	melanoma related
S100a6	9.48E-07	13.9	4.90E-07	18.9	melanoma related
Flt1 (VEGFR)	9.60E-06	6.41	4.62E-06	8.21	angiogenesis and vasculogenesis
Grem1	9.02E-09	11.6	2.92E-08	7.50	GF/cytokine signal

	O9-1 down vs DRG		O9-1 down vs Ectoderm			
Cxcr4	4.54E-05	-2.75	5.05E-06	-4.39	neural crest	chemokine signal
Id2	4.43E-06	-5.70	9.27E-07	-9.67	neural crest	neuronal differentiation, oligodendrocyte transcriptional repressors
Meis1	1.71E-04	-3.11	9.52E-06	-6.56	neural crest	
Mkrn1	1.07E-04	-2.08	1.31E-04	-2.03	neural crest	
Ngfr (p75)	2.74E-07	-29.2	9.47E-04	-2.26	neural crest	neuronal differentiation, trunk neural crest stem cell
Nr6a1	1.08E-04	-2.26	1.24E-08	-44.8	neural crest	
Robo1	2.48E-06	-7.02	1.79E-06	-7.85	neural crest	axon guidance receptor
Tcfap2b	7.71E-03	-5.37	9.47E-03	-4.98	neural crest	
Zic1	4.02E-05	-15.5	1.37E-02	-2.43	neural crest	neuronal differentiation
Zic2	6.85E-03	-2.27	1.66E-03	-2.99	neural crest	neuronal differentiation
Atf4	2.64E-05	-2.05	4.58E-06	-2.64	neural crest development	
Bmp4	4.52E-05	-3.72	1.33E-05	-5.07	neural crest development	osteogenic chondrogenic smooth muscle differentiation
Col2a1	1.87E-04	-4.88	8.63E-04	-3.31	neural crest development	chondrogenic differentiation
Ctnnb1	5.84E-06	-2.76	4.51E-07	-4.78	neural crest development	
Efnb1	7.82E-07	-4.57	1.48E-05	-2.51	neural crest development	salivary gland and eyelids
Gadd45a	2.75E-08	-3.29	3.29E-07	-2.19	neural crest development	
Gap43	6.11E-09	-61.3	3.06E-06	-4.26	neural crest development	migration, Schwann cell differentiation, neuroblastoma
Hoxa2	1.48E-04	-2.85	5.39E-06	-6.43	neural crest development	migratory cranial crest, cartilage precursors
Hoxb2	5.01E-05	-4.32	2.58E-06	-11.4	neural crest development	migratory cranial crest, cartilage precursors
Mbp	3.83E-04	-2.49	1.35E-04	-3.01	neural crest development	Schwann cell differentiation
Nfatc4	1.26E-04	-3.68	2.28E-05	-5.80	neural crest development	Schwann cell differentiation
Rarb	2.50E-04	-2.07	4.20E-06	-4.39	neural crest development	Pharyngeal arches, periocular mesenchyme, cranial ganglia, thymus
Rxrg	6.49E-04	-2.49	4.95E-04	-2.61	neural crest development	pre migratory trunk neural crest, PNS, cranial ganglia
Tgfb2	5.54E-04	-2.46	3.93E-04	-2.61	neural crest development	
Actc1	3.06E-03	-2.22	4.49E-03	-2.09	actin, alpha, cardiac muscle 1	
Myf1	1.16E-03	-3.77	1.57E-02	-2.15	Myosin light chain alkali fast skeletal muscle	
Gprn1	5.21E-07	-17.6	3.93E-06	-7.68	inducer of neurite outgrowth 1	
Isl1	3.34E-08	-241	2.71E-04	-3.24	neuronal differentiation	
Nkx6-1	7.60E-03	-2.04	3.70E-05	-7.10	neuronal development	
Ntrk2 (Tkrb)	2.82E-05	-4.11	3.12E-04	-2.52	neuronal differentiation	
Ntrk3 (Tkrc)	4.77E-05	-3.88	1.79E-04	-2.92	neuronal differentiation	
Reln (reelin)	1.25E-07	-3.92	2.32E-08	-6.12	neuronal development	
Vldlr	3.54E-06	-3.92	5.95E-07	-6.34	neuronal differentiation	
Plp	4.47E-07	-30.7	2.08E-05	-5.95	proteolipid protein (myelin) 1	
Ckb	2.30E-08	-41.4	6.32E-06	-4.24	enteric nerve neural crest stem cell	
Ednrb	2.82E-07	-68.2	8.15E-04	-2.87	enteric nerve neural crest stem cell	
Rbp1	1.86E-05	-6.93	2.15E-05	-6.60	enteric nerve neural crest stem cell	

Crmp1	3.53E-07	-8.91	1.34E-04	-2.20	EPI-NCSCs		
Gap43	6.11E-09	-61.3	3.06E-06	-4.26	neuroblastoma		
Rb1	7.21E-06	-4.17	9.45E-05	-2.49	HNSCCs		
Igf2	6.22E-10	-192	1.61E-09	-89.1	neuroblastoma		
Hoxa5	3.06E-07	-30.3	6.92E-05	-3.86	axis formation		
Hoxa7	5.39E-08	-30.8	4.21E-07	-11.3	axis formation		
Hoxb3	1.28E-04	-2.65	7.12E-06	-4.99	axis formation		
Hoxb4	6.03E-07	-14.3	4.41E-07	-16.6	axis formation		
Hoxb5	9.94E-07	-13.4	2.32E-05	-4.56	axis formation		
Hoxb6	5.22E-06	-7.69	1.68E-03	-2.07	axis formation		
Hoxb7	4.39E-07	-21.1	4.30E-05	-4.03	axis formation		
Hoxb9	4.60E-03	-2.60	3.22E-04	-4.96	axis formation		
Hoxc6	3.43E-06	-27.2	1.82E-05	-12.0	axis formation		
Hoxc9	7.68E-06	-15.1	1.59E-03	-2.83	axis formation		
Hoxd3	7.54E-04	-2.98	7.36E-05	-5.28	axis formation		
Hoxd4	5.74E-07	-8.46	3.21E-07	-10.5	axis formation		
Bmp7	1.38E-05	-2.97	3.14E-05	-2.57	GF/cytokine signal		
O9-1 up vs DRG			O9-1 down vs Ectoderm				
Hk2	1.36E-03	3.00	5.22E-04	-3.73	neural crest		
Msh6	2.40E-03	2.06	2.05E-03	-2.11	neural crest		
Msx1	1.29E-06	4.63	1.13E-04	-2.03	neural crest		
O9-1 down vs DRG			O9-1 up vs Ectoderm				
Gadd45g	1.49E-04	-2.76	1.11E-04	2.92	neural crest development		
O9-1 up vs DRG							
Bid	1.09E-05	2.65	neural crest				
Gart	7.97E-06	3.42	neural crest				
Mcm2	4.52E-04	4.40	neural crest				
Mcm5	1.63E-02	2.33	neural crest				
Mdm2	3.07E-06	2.58	neural crest				
Myo10	1.40E-05	2.90	neural crest				
Snail1 (Snail1)	2.28E-04	3.03	neural crest				
Ctgf	2.91E-04	3.87	neural crest development				
Nfatc3	5.61E-05	2.33	neural crest development			Schwann cell differentiation	
Pofut1	2.57E-05	2.45	neural crest development				
Rxra	7.69E-06	2.19	neural crest development				
Tead2	1.34E-03	2.78	neural crest development				
Prokr2	8.06E-07	2.07	enteric nerve neural crest stem cell				
Thy1	8.09E-04	4.34	stem cell				
Srebf1	6.24E-06	2.25	human disease				

O9-1 down vs DRG				
Basp1	4.76E-04	-2.26	neural crest	
Dact1	2.33E-05	-2.27	neural crest	
Dcn	9.90E-08	-18.2	neural crest	
Foxd1	2.21E-04	-2.86	neural crest	
Hadhb	9.52E-06	-2.51	neural crest	
Mef2c	2.66E-05	-2.06	neural crest	
Notch1	9.27E-04	-2.22	neural crest	
Rbm4	1.31E-05	-2.21	neural crest	
Tcf12	3.76E-04	-2.17	neural crest	
Acta1 (αSMA)	3.70E-03	-2.41	neural crest development	smooth muscle differentiation
Ednra	2.12E-03	-2.75	neural crest development	pharyngeal arch development
Fbxw7	1.23E-07	-2.29	neural crest development	
Kif3a	1.31E-04	-2.78	neural crest development	
Mbp	1.86E-05	-5.08	neural crest development	Schwann cell differentiation
Nefm	8.80E-08	-66.1	neural crest development	Neuronal differentiation
Nes	7.22E-03	-2.04	neural crest development	stem / neuronal differentiation
Neurod1	2.69E-05	-3.65	neural crest development	neuronal differentiation
Neurod4	8.22E-06	-7.78	neural crest development	neuronal differentiation
Pou4f1	1.01E-08	-50.0	neural crest development	
Smad1	6.69E-06	-2.79	neural crest development	GF/cytokine signal
Smad5	8.20E-06	-2.32	neural crest development	GF/cytokine signal
Sostdc1	1.47E-02	-5.19	neural crest development	tooth development
Zic4	6.90E-04	-3.30	neural crest development	
Fabp7	1.53E-05	-5.92	neural crest development	
Myt1	2.69E-08	-35.9	neural crest development	Glial differentiation
Mapt	1.00E-06	-46.2		myelin transcription factor 1
Prph1	7.04E-06	-32.0		Neuron-specific microtubule-associated protein tau
Slc1a3	4.30E-06	-5.96		Peripherin neurons in the peripheral nervous system
				Radial glia marker
Chn2	6.46E-07	-6.77	enteric nerve neural crest stem cell	
Npy	4.02E-06	-5.49	enteric nerve neural crest stem cell	neuronal differentiation
Ret	6.23E-03	-2.22	enteric nerve neural crest stem cell	Hirschsprung disease
Crmp1	4.90E-05	-3.30	EPI-NCSCs	
Emcn	1.26E-07	-20.9	stem cell	
Eng	6.29E-05	-2.30	stem cell	
Lztr1	7.59E-05	-2.28	human disease	
Tek (Tie2)	1.26E-04	-4.01	endothelial cells	
Msc	7.35E-08	-11.7		cranial muscle differentiation

O9-1 up vs Ectoderm				
Adh5	1.18E-07	2.29	neural crest	
Foxc1	9.06E-04	2.73	neural crest	
Jun	7.82E-06	8.80	early neural crest development	
Kif3a	1.61E-05	2.87	neural crest development	
Myh10	1.95E-05	2.63	neural crest development	
Nr2f1	5.39E-03	4.42	neural crest development	neuronal differentiation
Rela	2.26E-05	2.46	neural crest development	
Tgfb1	3.75E-05	2.13	neural crest development	
Tgfb2	1.43E-07	5.85	neural crest development	
Nfe2l2	4.32E-05	2.55	human disease	

Pdlim5	6.90E-05	2.19	neuroblastoma	
Ptpn11	7.76E-06	2.43	Noonan syndrome	CNTF pathway
Vim	9.20E-08	36.6	neuroblastoma	
Bmp1	2.80E-06	4.36		osteogenic differentiation
Bcl2l1	8.74E-06	2.11	Pro-survival genes	
Tbx3	1.52E-04	2.06	Pro-survival genes	
Flt1	1.45E-06	2.02	stem cell	
Mcarn	8.11E-06	3.84	stem cell	
Arpc1b	3.54E-05	2.75	enteric nerve neural crest stem cell	
Hdlbp	1.33E-05	3.12	enteric nerve neural crest stem cell	
Rpi30	1.24E-03	2.78	enteric nerve neural crest stem cell	
Pparg (PPARγ)	4.15E-06	2.07	adipocyte differentiation	
O9-1 down vs Ectoderm				
Adat1	5.33E-05	-3.64	neural crest	
Ciapi1	1.24E-04	-2.30	neural crest	
Fzd3	1.20E-05	-2.75	neural crest	
Gart	4.11E-04	-2.16	neural crest	
Gja1	1.43E-06	-2.81	neural crest	
Gnl2	8.87E-05	-2.64	neural crest	
Heph	8.80E-06	-2.61	neural crest	
Mybl2	2.86E-03	-2.51	neural crest	
Olig3	2.12E-04	-2.50	neural crest	
Plxna2	2.99E-05	-3.86	neural crest	
Pou2f1	2.86E-06	-3.15	neural crest	
Sp4	1.70E-04	-2.28	neural crest	
Tcfap2b	1.37E-02	-3.18	neural crest	
Tcfap2c	1.08E-09	-5.90	neural crest	
Dlx3	1.25E-03	-2.17	neural crest development	arch differentiation
Itgb5	1.78E-05	-3.93	neural crest development	
Lef1	1.15E-04	-2.82	neural crest development	arch development
Pitx2	2.30E-07	-2.98	neural crest development	ganglia development
Pou3f1	1.84E-07	-8.79	neural crest development	Schwann cell differentiation
Sp7 (Osterix)	8.54E-08	-2.85	neural crest development	osteogenic differentiation
Sulf1	1.49E-08	-8.52	neural crest development	
Tcf7	1.34E-05	-2.55	neural crest development	
Tcof1	2.64E-05	-3.40	neural crest development	
Tgfbr1	3.56E-07	-2.19	neural crest development	
Wnt1	4.94E-07	-2.52	neural crest development	GF/cytokine signal
Zic3	2.54E-05	-20.2	neural crest development	
Sox2	3.93E-08	-3.52		neuronal differentiation
Nkx2-2	4.39E-05	-2.30	Ewing sarcoma	
Hes1	7.11E-04	-2.06	human disease/ neural crest development	
Myebp	4.07E-06	-2.49	human disease	
Cdx1	7.30E-05	-9.50	Pro-survival genes	
Mcl1	1.06E-07	-2.64	Pro-survival genes	
Mme	2.22E-05	-2.08	stem cell	
Nt5e	4.80E-04	-5.29	stem cell	
Thop1	8.91E-05	-3.46	EPI-NCSCs	
Cited1	2.52E-03	-2.04	neural crest development	melanocyte differentiation